AH68-01616B (REV 0.0)

SAMSUNG

YP-ST5

DIGITAL AUDIO PLAYER

yepp™

- MP3, WMA, ASF, Ogg Playback
- Removable Storage Device
- Direct MP3 Recording
- FM Reception
- 3D Sound
- USB 2.0 Support
- Upgradable
- 20 Hours of Continuous Play
- Voice Recording Function

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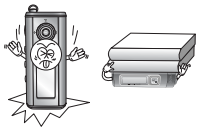
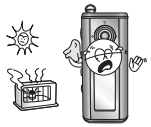
Safety Instructions

Safety Instructions

Read and understand all the instructions to avoid injury to yourself and damage to the equipment.

Do not expose to extreme temperatures (above 95°F or below 23°F). Do not expose to moisture.	Do not subject the unit to severe impact, or place heavy objects on it. 	Do not let any foreign matter spill into the device.
Be careful not to subject the player to excessive pressure when wearing it round your neck.	Do not expose to chemicals such as benzene and thinners.	Remove batteries when the device is left unused for a long period of time.
Do not expose to direct sunlight or heat sources. 	Do not store in dusty areas.	Do not try to disassemble and repair the device yourself.

✻ Please be aware that we claim no responsibility for damage from data loss due to breakdown, repair or other causes.

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Cautions for Use

Follow Traffic Safety Instructions

- Do not use the earphones while driving an automobile or riding a bicycle. It's not only dangerous, but also against the law.
- It may cause an accident if you turn up the volume of the earphones while walking down the street, especially crossing at intersections.

Protect your ears

- Do not turn up the volume too high. Doctors warn against prolonged exposure to high volume.
- Stop using the device or turn the volume down if you have ringing in your ears.

Ambient operating conditions

- Ambient temperature : 5°C ~ 35°C (41°F ~ 95°F)
  Humidity : 10 ~ 75%

Environmental Information

- Follow local guidelines for waste disposal when discarding packages, batteries, and old electronic appliances.
- Your player is packaged with cardboard, polyethylene etc., and do not use any unnecessary materials.

Features

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MP3, WMA, ASF, Ogg Playback

- Your player supports playback of MP3, WMA, ASF and Ogg.

Removable Storage Device

- You can easily copy and paste files to the player using Windows Explorer.

Direct MP3 Recording

- You can convert music from CDs, cassettes, and radio into MP3 files without a PC.

FM Reception

- Listening to an FM program is made easy with Auto Search and Frequency Memory functions.

3D Sound

- The 3D surround feature adds spaciousness to the sound.

USB 2.0 Support

- Maximum data speed transfer of 18 Mbps.

Upgradable

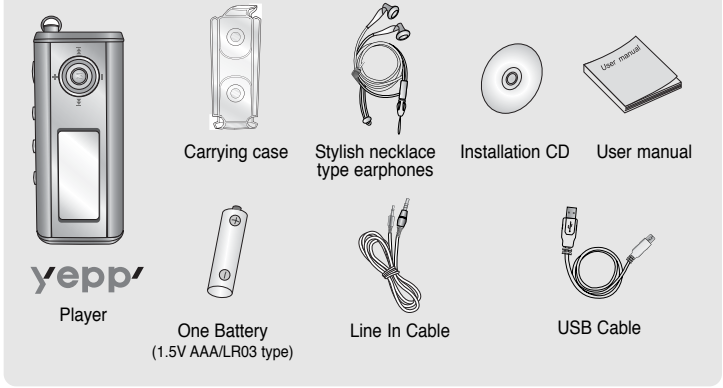
- You can upgrade the built-in programs when available. Add functions, CODEC, etc. Please check the home page (www.samsung.com) for upgrades.

20 Hours of Continuous Play

- This player uses one AAA/LR03 alkaline battery. Operation can last up to 20hours. Actual playing time may vary according to the type and capacity of the battery.

Voice Recording Function

- You can make high quality voice recordings.



Model	YP-ST5 H	YP-ST5 V	YP-ST5 X	YP-ST5 Z
Built-in memory	128MB	256MB	512MB	1GB

- The capacity of the useable built-in memory is less than indicated as the internal firmware uses a part of the memory as well.
- Design of accessories is subject to change, for the purposes of improvement, without notice.

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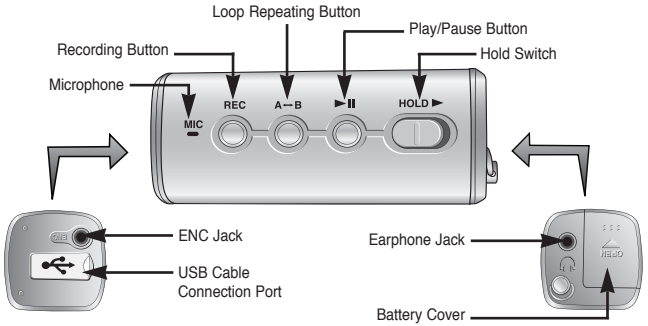

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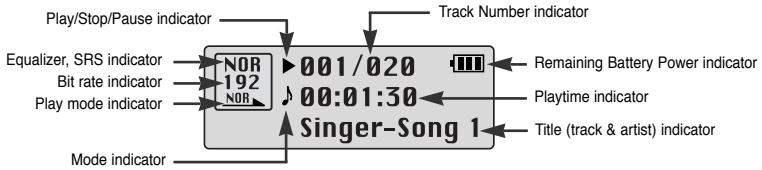
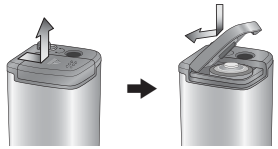
Display



Inserting a Battery

1 Slide the cover in the direction of the arrow to open.

2 Insert a battery to the right poles + , – and push-close the cover in the direction the arrow as indicated.



Note

- Do not place heavy objects on the cover.

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▶ System Requirements.

The PC system must meet the following specifications:

- Pentium 133MHz or greater
- Windows 98 SE/ME/2000/XP
- 40MB of available hard disk space
- CD-ROM drive (double speed or greater)
- USB port (2.0) supported
- VGA graphic

Note

- Install the operating system in Administrator Account mode for Windows 2000 or XP. Otherwise, installation will not be completed.
- Windows ME, 2000 and XP can recognize the driver without installing the provided program. However, you must install the program in order to format yepp and upgrade firmware.
- If the YP-ST5 program has not been installed in Windows 98, then it will not communicate with your removable disk. You must install the USB driver file first.

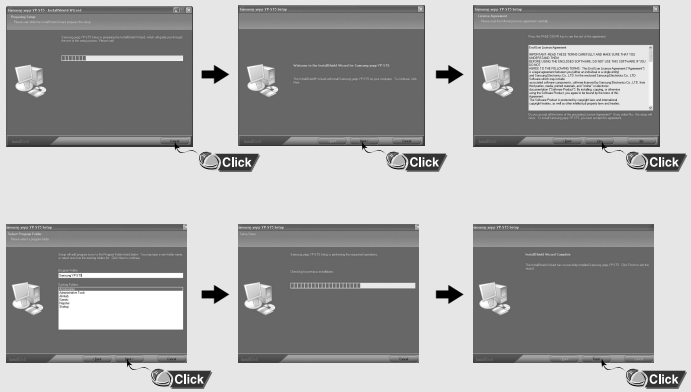
Before connecting yepp to PC, make sure to install USB driver. If “Add New Hardware Wizard” appears, press the [Cancel] button and install the USB driver.

Installing software

1 Insert the Installation CD into the CD-ROM drive.
Select [Install yepp USB Driver].

Continued...

2 Complete the installation by following the instructions in the order as they appear in the windows.



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Connecting yepp to PC with USB cable

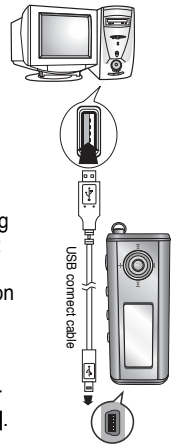
1 Connect the USB cable to the USB port on the computer.

2 Connect the other end of the USB cable to the USB cable connection port on the bottom of the player.

- If you disconnect the USB cable from your PC while implementing a command or initializing during USB driver installation, your PC may not function correctly.

3 The USB driver is installed with a message saying that it is searching for a new device. You may not see the display screen during installation. Go to the device manager to check that installation has been successfully completed.

4 Upon installation of the USB driver "Samsung yepp YP-ST5 USB Device" will appear in the **[System Properties]** → **[Device Manager]**.



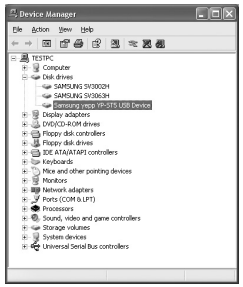
Continued...

How to check USB driver

Windows 98:
Control Panel → System → Device Manager → Disk Drives → Samsung yepp YP-ST5

Windows 2000:
Control Panel → System → Hardware → Device Manager → Disk Drives → Samsung yepp YP-ST5 USB Device

Windows XP:
Control Panel → System → Hardware → Device Manager → Universal Serial Bus controllers → Disk Drives → Samsung yepp YP-ST5 USB Device



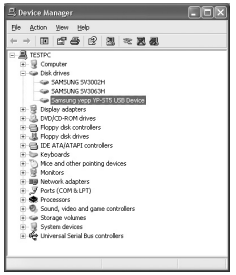
5 When the USB driver is not installed automatically, refer to the next page.

Go to “Downloading/Uploading files” if the USB driver is in place.
Follow these steps if the USB driver is not in place :

When an error occurs during installation of the USB driver

1 Check the device manager.

Windows 98,ME:
Control Panel → System → Device Manager
Windows 2000:
Control Panel → System → Hardware → Device Manager
Windows XP:
Control Panel → System → Hardware → Device Manager



2 Check if there is a device listed with an exclamation point or a question mark (displayed as unknown device or USB device).

3 Double click on the device listed with an exclamation point or a question mark.

Note

- If you are using Windows 2000 and your version of Windows does not recognize the USB driver please download and install the latest service pack from windowsupdate.microsoft.com
- The installation method may vary depending on the type of PC or operating system. Contact your PC dealer or service center for installation information.
- If errors occur continuously when you install the USB driver, reconnect the USB cable after rebooting your system.

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Manual Installation of USB Driver |

4 After selecting the driver, click [Update Driver].

5 Click [Next].

Upgrade Device Driver Wizard
Welcome to the Upgrade Device Driver Wizard
This wizard helps you upgrade a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel
Click

6 Select [Search for a suitable driver for my device] and then click [Next].

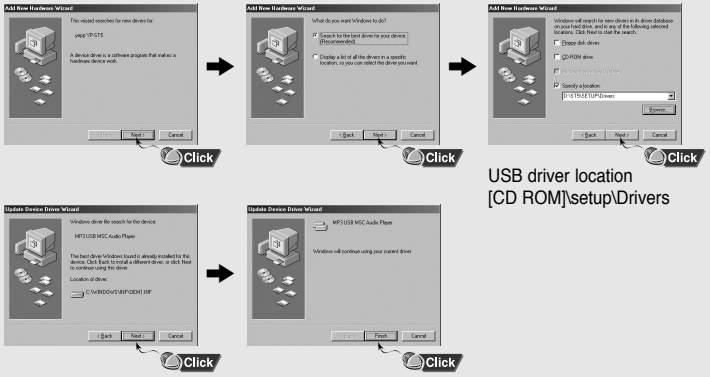
Upgrade Device Driver Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard upgrades drivers for the following hardware device:
USB Mass Storage Device
Upgrading to a newer version of a device driver may add functionality to or improve the performance of this device.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

7 Click [Next] to finish.

Add New Hardware Wizard
This wizard searches for new drivers for:
USB Device
A device driver is a software program that makes a hardware device work.
< Back
Next >
Cancel
Click

In Windows 98

Complete the installation by following the instructions in the order as they appear in the windows.



USB driver location
[CD ROM]\setup\Drivers

: To complete the installation, make sure to restart your PC.

Note

- You can not use it as a removable disc in Windows 98 if the YP-ST5 program is not installed. Make sure to install the USB driver file first.

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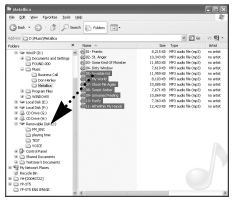
Downloading/Uploading files

1 Connect the player to your PC.

2 Open Windows Explorer on PC.

● Removable Disc is displayed in Windows Explorer.

3 Select the file to save and drag-and-drop it into the removable disc icon. (In numerical, alphabetical order)



Notice

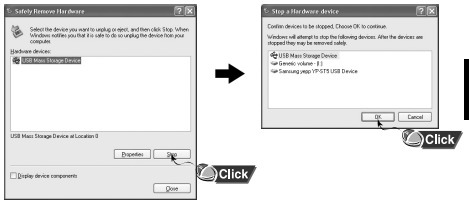
- The “WRITING/READING” message will appear during file download or upload. Disconnecting the USB cable while “WRITING/READING” is displayed may cause malfunction of the unit.
- The order of music files is not relative to the replay order when you select a Removable Disc in Windows Explorer.

Disconnecting the USB cable

After completing the file transfer, you must disconnect the cable in the following way:

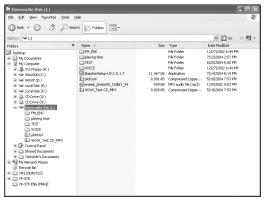
1 Double-click on the green arrow in the taskbar on the bottom right of the window.

2 Select the USB device, and then press the **[Stop]** button. When the **[Stop a Hardware device]** message appears, press the **[OK]** button and disconnect the USB cable.



Formatting

1 Select the removable disc icon and click the right mouse button to select [Format].



2 Press the [Start] button.

● All saved files will be formatted.

● You can change the name of removable disc by selecting [Volume label].

Note

- By formatting, all previously preset menus will be initialized.
- Care must be taken as formatted files can not be recovered.

Installing yepp Studio

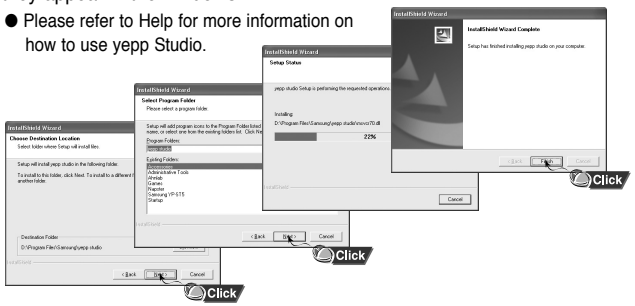
yepp Studio is the program that can convert and play back the music files in PC.

1 Insert the Installation CD into CD-ROM drive. Select [Install yepp Studio].

2 Select language

3 Complete the installation by following the instructions in the order as they appear in the windows.

- Please refer to Help for more information on how to use yepp Studio.



Note

- If [Register Serial Number] window appears when you install the yepp Studio for the first time, enter the Serial Number (S/N) attached on the back of the player.

To View Help on yepp Studio

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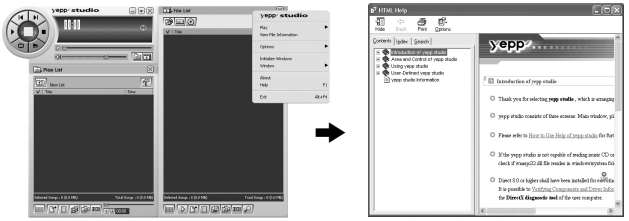
Run yepp Studio and press F1.

- Help will appear.

Move the arrow to the top of yepp Studio and right click on the mouse. The following selection window will appear.

- Click on Help and the Help window will appear.



Note

- Music recognition technology and related data are provided by Gracenote and Gracenote CDDB® Music Recognition ServiceSM.
- CDDB is a registered trademark of Gracenote. The Gracenote logo and logotype, the Gracenote CDDB logo and logotype, and the "Powered by Gracenote CDDB" logo are trademarks of Gracenote. Music Recognition Service and MRS are service marks of Gracenote.

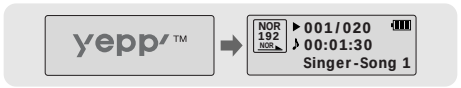
Turning Power On and Off

Power On : Press the ▶II button to turn on the power.
Power Off : Press and hold the ▶II button to turn off the power.

Playing Music

Press the ▶II button.

- Playback starts automatically.



Pausing Music

Press the ▶II button to pause playback.

- If no buttons are pressed within 10 seconds (or custom settings), the player automatically powers off.
- While in Pause mode, press the ▶II button again to resume playback.

Note

- WMA files can only be played as music files with a compression rate of 48Kbps-192Kbps.
- The power off time can be set in the menu.

Adjusting the Volume

Press ➖,➕ during playback to adjust the volume.

Note

- Volume ranges from 00 to 30.

HOLD Function

In Hold mode, all buttons are disabled.

Slide the

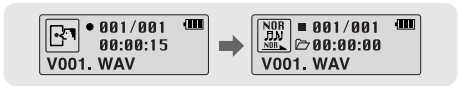
switch in the direction of the arrow.

❋ When the button is pressed, the " HOLD!" message will appear on the display.

✻ To move to other modes from the Voice mode, refer to “Changing Mode”.

1 Press and hold the REC button to start voice recording.

2 Press the REC button again to stop the recording and save the voice file.

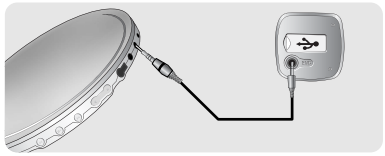


Note

- The files are recorded in the order of V001,V002.....,
  and saved as WAV file in the VOICE folder after recording.
- If the Memory is full, Voice Recording is stopped automatically.
- Voice Recording does not work in FM Mode or when the Line In cable is connected.

✻ To move to other modes from the LINE_ENC mode, refer to “Changing Mode”.

1 Connect the Audio Output port on the external audio source (or the Line Out port) to the ENC port on the device with the Line cable.



2 Press and hold the REC button to start MP3 encoding.

3 If the REC button is pressed during encoding, the encoding stops and an encoding file is created.

● The files are encoded in the order of L001, L002....
and saved as MP3 file in LINE_ENC folder after encoding.

Note

- Bit Rates can be set within the range of 32Kbps~128Kbps.
- Volume can be adjusted while monitoring the Encoding.

Notice

- Do not disconnect the Line cable during Encoding.
- If the battery is not charged enough, encoding will not be done.
- Adjust the volume of the external audio source to a suitable level and encode it.
  If the volume level is extremely high, the sound quality may not be good.

▶ To search for specific parts during play

- Pull and hold ⏮, ⏭ to the left or right during playback to search for the part you want to listen to.
- Release the key to resume play normally.

▶ To change tracks during play

- Pull ⏭ briefly during playback to play the next track.
- Pull ⏮ briefly within 5 seconds after playback starts to move to and play the previous track. Pull ⏮ briefly after five seconds to play the current track from the beginning.

▶ To change tracks when stopped

- Pull ◀◀, ⏭ to the left or right in stop mode to move to the previous/next track.

Note

- VBR(Variable Bit Rate) file: A file that constantly changes the compression rate according to the type of sounds, such as their pitch, in the file.
- In the case of a VBR file, you cannot move to and play the previous track even if you push ⏮ within 5 seconds after playback starts.
- Files that were downloaded in MP2 or MP1 and had their file extension changed to MP3 may not play.

First, press the key to display the menu screen and select FM Radio.

Manual Search for a Frequency

- Pull ⏮, ⏭ briefly to search manually for the frequency you want.

Automatic Search for a Frequency

- Pull and hold ⏮, ⏭ to search for and stop at frequencies with reception.

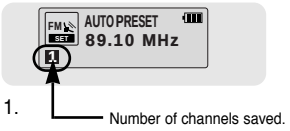
Manual Storage of a Frequency

- After searching manually for the frequency you want, press and hold the button in the center to display the Save screen.

- Use ⏮,⏭ to select the number you want to assign to save the frequency and then press the button.

Automatic Storage of a Frequency

- Press and hold the A↔B button while in FM Mode.
- Frequencies within the range of 87.5MHz to 108.0MHz are automatically selected and stored.
- Frequencies are automatically stored, starting from 1.



Note

- To exit from FM Mode press the button in the center.
- Mono (MO) or Stereo (ST) is automatically selected.
- Up to 20 frequencies can be stored.

Searching Stored Frequencies

1 Press the ▶II button in FM Mode.

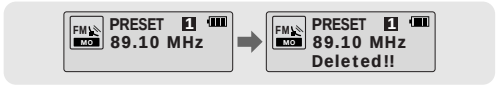
- PRESET screen will appear.

2 Use I◀◀, ▶▶I to move to the frequency you want.

Deleting Stored Frequencies

- After moving to the PRESET number you want to delete, press and hold the button.

- The saved PRESET number will be deleted.



Note

- You can store up to 20 frequencies.
- Press the ▶II button in the PRESET screen to exit the PRESET mode.

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1 Press and hold the REC button during FM reception.

- Encoding of the currently transmitted FM broadcast begins.

2 Press the REC button again.

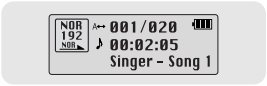
- A file is created and the encoding stops.
- Files are encoded in the order F001, F002, F003...and saved as MP3 files in FM_ENC folder.

Loop Repeating

▶ Starting Point

While playing music files, press the A↔B button briefly at the beginning of the loop you want to set.

A↔ appears in the display.



▶ Ending Point

Press the A↔B button briefly again to set the end of the loop.

A↔B appears in the display.
The loop is played repeatedly.

Note

- Press the A↔B button briefly to cancel the loop.
- Loop Repeat is automatically released if you Speed Search with ⏮, ⏭.

Setting up MENU

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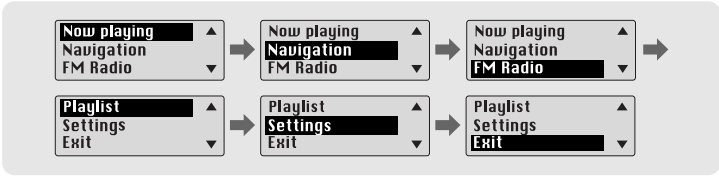
Press the button to switch to MENU mode.
Use −,+ to move and press the button briefly to select the menu you want.
Press and hold the button to exit the MENU mode.



- Now playing : To check the file currently playing.
- Navigation : To move to Navigation Mode
- FM Radio : To listen to FM radio
- Playlist : To play back only the files you want
- Settings : To set the yepp functions
- Exit : To exit MENU

Note

- Menu mode will be cancelled if no buttons are pressed within 15 seconds

You can easily search for files or switch modes using the Navigation function.

1 Press and hold the button to enter Navigation mode.
or press the button to move to Menu and then select Navigation in Menu.

2 Select the file or folder that you want to play.

- ⏮: When moving to a higher-level folder.
- ⏭: When moving to a lower-level folder.
- ➖,➕ : When moving to a file or folder in the same directory.
- : Move to the next folder down. When there is not a lower folder, the selected file will be designated as part of the playlist.

3 Press the ⏯ button.

- The selected file will be played.

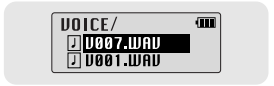
Note

- Press and hold the button in Navigation mode to exit the Navigation mode.

Changing Mode

You can change the mode in the following method.
Ex) To change from the Voice mode to the Music mode

1 Press and hold the button in the Voice mode.



2 Use ⏮ to move to the upper folder.

3 Use ➖,➕ to move to the music file you want and press the ⏯ button.

- As it is changed to the Music mode, the selected file will be played.

Note

- To change to the FM mode, refer to “Setting up Menu”.

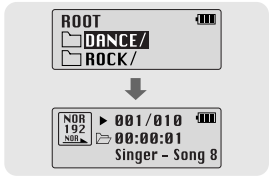
Playing/Exiting Folder

▶ Playing Folder

1 Press and hold the button to move to the Navigation mode.

2 Use −,+ to move to the folder you want and press the ▶II button.

- When " 🗁 " appears, the selected file will be played.

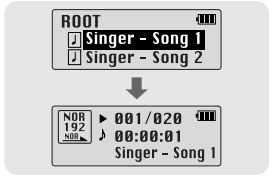


▶ Exiting Folder Play

1 Press and hold the button during folder playback to move to the Navigation mode.

2 Use −,+ to move to the file you want and press the ▶II button.

- After folder play is released, " ♩ " mark will appear and the selected file will be played.



Setting Playlist

- Move to the file you want in Navigation mode and press the button.
  - The selected file will be marked.
  - To exit the playlist setting, move to the marked file in Navigation mode and press the button again.

Playing Playlist

1 Press and hold the A↔B button in music mode or select Playlist in Menu.

- The playlist you set will be displayed.

2 Move to the file you want to play and press the ▶II button.

- " ♥ " mark appears and the selected file will be played.

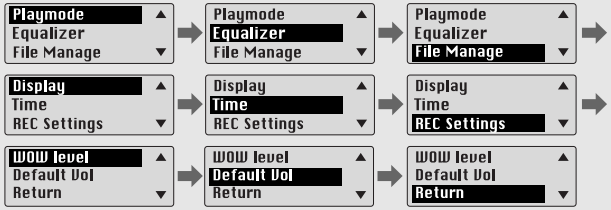
Note

- Select PLAYLIST in File Delete (see “Deleting”) to release the playlist you set.

1 Select Settings in the MENU. (refer to “Setting up MENU”)

2 In Settings, use −,+ to move to the function you want and press the button to select.

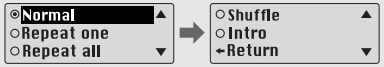
● To move to a previous menu, use ⏮ or select Return.



ENG

1 Select Playmode in Settings.

2 In Playmode, use −,+ to move to the mode you want and press the button to select.

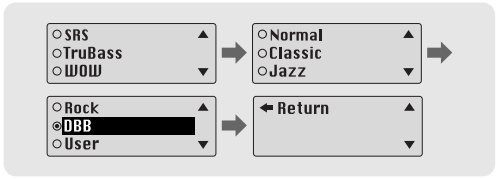


- Normal: To play all the tracks in order one time.
- Repeat one: To repeat one track.
- Repeat all: To repeat all tracks.
- Shuffle: To play tracks at random.
- Intro: To listen to the first part of all saved tracks for 10 seconds.
- Return: To move to a previous menu

1 Select Equalizer in Settings.

2 In Equalizer, use −,+ to move to the sound mode you want and press the button.

- SRS (((•))): You will hear 3D Stereo sound.
- TruBass (▭): This is a bass boost feature that adds fullness to the sound.
- WOW: This feature allows you to enjoy the SRS and Trubass features simultaneously.
- If you want bass boost, select DBB.



3 Select User and set the Bass/Treble as desired.

- Bass/Treble can be adjusted from 0 to 10 with −, +.

Note

- SRS(•) WOW is a trademark of SRS Labs, Inc.
  WOW technology is incorporated under license from SRS labs, Inc..
- Please adjust the volume to a suitable level, as the volume may increase in the SRS setting.
- This unit supports sampling frequencies of 32KHz, 44.1KHz or 48KHz.
- The SRS function is not set for voice recording files.

ENG

Select File Manage in Settings.

Deleting

1 Select File Delete in File Manage.

2 Select the mode where there is a file to delete in File Delete.

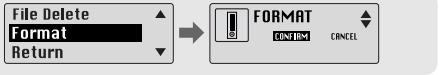
3 Use −,+ to move to the file you want to delete, press the button and select CONFIRM. Use ⏮ to exit the setting.

Formatting

1 Select Format in File Manage.

2 Select CONFIRM in Format.

- Formatting is performed if CONFIRM is selected.



Note

- All files will be deleted when formatting the built-in memory.
- It is recommended that formatting be carried out on a PC that has the provided program installed as formatting in the Menu may take a long time.

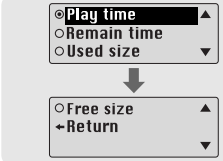
Select Display in Settings.

▶ Scroll Speed

- Use −,✚ to set the scroll speed.
- The setting range for the scroll speed, which adjusts the speed of the track title flow, is 0 to 10.

▶ Information

- Play time: Indicates current play time
- Remain time: Indicates remaining play time
- Used size: Indicates used memory
- Free size: Indicates remaining memory



▶ Backlight

[Light Time - Jog]

- Use −,✚ to set the Light-On time.
- The setting range for Light-On Time is 0 to 10 seconds.
- When set to On, the Light stays on continuously.

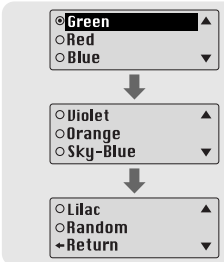
[Light Time - LCD]

- Use −,✚ to set the LCD Light-Off time.
- The setting range for Light-On Time is 0 to 10 seconds.
- When set to On, the Light stays on continuously.

[LCD color]

- Use −,✚ to select the LCD color you want, out of 7 colors.

Green → Red → Blue →
Violet → Orange → Sky-Blue →
Lilac → Random



Note

- The light does not illuminate when the residual battery level is low.

▶ Contrast

- Use −,✚ to set the contrast.
- The setting range for the contrast, which adjusts the brightness of the screen, is from 0 to 10.

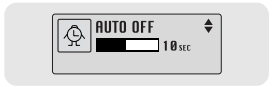
ENG

Time

Select Time in Settings.

▶ Auto Off

- Use −, + to set the Power-Off time.
- You can set the time from 0 to 1 minute. If no key is pressed after play stops, the player will automatically turn off after the time you set.
- If you set it to OFF, it will not turn off automatically.



▶ Sleep

- Use −, + to set the Sleep time.
- 15, 30, 60, 90 and 120 minutes are available for sleep time, and it will automatically turn off after the time you set.
- When set to OFF, it does not turn off automatically.

REC Settings

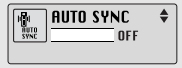
Select REC Settings in Settings.

▶ Bitrate

- Use −, + to set the encoding bit rate you want.
- When encoding music into an MP3 file, you can select one of the following bit rates: 32Kbps, 48Kbps, 64Kbps, 96Kbps and 128Kbps.

▶ AutoSync Time

- Use −, + to set the AutoSync Time.
- AutoSync Time is a function for separating and saving MP3 files when there is no sound for a set time during MP3 encoding.
- The setting range for the AutoSync Time is from 1 to 5 seconds.
- If AutoSync Time is set to OFF, encoding keeps going even if there is no sound, and then it is saved as one file.



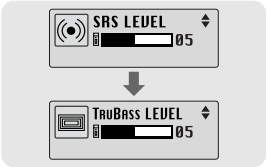
Note

- Auto Sync function can support from 64Kbps to 128Kbps.

ENG

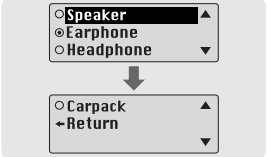
WOW Level

Select WOW level in Settings.



▶ Adjusting SRS and TruBass LEVEL

- If you select SRS or TruBass in the WOW level menu, you can adjust the SRS and TruBass level.
- Use ➖, ➕ select the level you want.
- The level for SRS and TruBass can each be set within the range of 0 to 10.



▶ Optimization

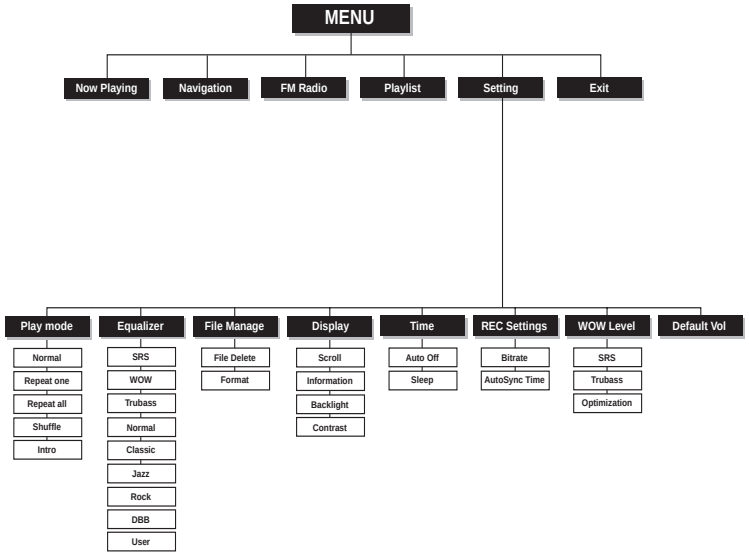
- If you select Optimization, it optimizes the SRS function according to the device connected.
- Use ➖, ➕ to select Speaker, Headphone, Earphone or Carpack(car cassette adapter).

Default Volume

Select Default vol in Settings.

- Use ➖, ➕ to set the default volume value.
- It is possible to set the default volume to a value between 0 and 30(MAX).
  If the power is turned on again after having adjusted the volume above the default value, music is played at the default volume.
- If the power is turned on again after the volume was set to within the default value, the music is replayed at the previously played volume.

MENU Table



- Use the button to move and select.

The software doesn't work

- Refer to the System Requirements

The player does not work and the LCD displays nothing.

- Check the battery capacity
- Check to see if the battery is inserted to the right poles (+ , –)
- After connecting it to PC, execute YP-ST5 Update in the desktop to update the product.

In PLAY mode, music is not played after pressing the ▶II button

- Check to see if MP3 or WMA files are saved in the built-in memory.
- Check to see if the HOLD button is locked.

Files cannot be downloaded.

- Check to see if the driver is installed correctly in the computer.
- Check the connection between the player and PC.
- Check and/or replace the battery, turn on the play's power.
- Operating system limits the number of files you can save. Please save your music files by creating a subfolder.
- Check if the memory is full.

Backlight does not work.

- Check the backlight setup.
- When the battery power is low, the backlight will go out.

The buttons do not work.

- Check setting of Hold switch.
- Remove the battery once and then insert it again.

The player keeps being turned off.

- In Stop mode, the power is automatically turned off after ten seconds (changes depending on settings).
- Check to see if there are files saved in it.

Something's wrong with play time displayed during Play mode.

- "VBR SONG" message is displayed while VBR (Variable Bit Rate) file is playing.

LCD window is dark

- Check Contrast

There is a file saved in yepp, but "No File" appears in the screen.

- After checking whether the folder is played, use the Navigation function to change the folder.
- After connecting it to PC, execute YP-ST5 Update in the desktop to update the product.

I cannot properly connect it to PC.

- Win98 : try to connect again after installing yepp Driver.
- WinME : remove the yepp Driver program and press the Start in the desktop to execute Windows Update. After selecting important update and service pack, execute update all.
- Win2000/XP : Try to connect it again after rebooting PC.

Specifications

Model	YP-ST5
Built-in Memory capacity	128MB(YP-ST5 H), 256MB(YP-ST5 V), 512MB(YP-ST5 X), 1GB(YP-ST5 Z)
Voltage	1.5V X 1 (AAA/LR03 size alkaline battery)
Playing time	lasts up to 20hours (Alkaline battery, MP3 128Kbps, Vol level 20)
Dimensions/Weight	23 X 54 X23 mm / 24 g (without battery)
Case	Plastic/Aluminum
Noise Ratio	89dB with 20KHz LPF
Earphones Jack Output Power	10mW/CH (16Ω)
Output Frequency Range	20Hz~20KHz
Operating Temperature Range	-5 ~ +35°C(23~95°F)
FM Frequency	87.50 ~ 108.00 MHz
FM Signal to Noise Ratio	45dB
FM T.H.D	1%
FM Useable Sensitivity	10dB
File Support	MPEG1/2/2.5 Layer3(8Kbps ~ 320Kbps, 8KHz ~ 48KHz) WMA, ASF (8Kbps ~ 192Kbps, 8KHz ~ 48KHz), Ogg

MEMO